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Clinical Radiology Extra (2004) **59**, 72–73

CASE REPORT

Spontaneous tumour seeding of the percutaneous nephrostomy tract by a lower ureteric squamous cell carcinoma

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Introduction

Tumour seeding of a percutaneous biopsy needle or drainage tract from tumours arising in the bladder, prostate, colon, liver, pancreas and gall bladder is well documented. There has usually been direct contact with the tumour, either during biopsy or by therapies involving dilation or palliative stenting. We report a case of tumour seeding of a nephrostomy tract, where there was no history of direct contact with the lower ureteric squamous cell tumour.

Case report

A 57-year-old woman was diagnosed in 1994 with interstitial cystitis. Biopsy of the bladder mucosa revealed a mild chronic inflammatory infiltrate. Her past medical history included hypertension, hypercholesterolaemia and previous hysterectomy. She presented in 2001 with an obstructing left distal ureteric tumour. Before resection of the tumour a nephrostomy drain was placed in the left pelvicalyceal system and a double J stent within the left ureter. Both the nephrostomy drain and the double J stent were removed after surgery for the ureteric tumour. Histology demonstrated a poorly differentiated squamous cell carcinoma. This tumour was graded as a G3 tumour and the TNM staging was T3N0M0. A surveillance ureteroscopy in April 2002 showed a non-malignant stricture in the left distal ureter and this was dilated. No evidence of bladder tumour or recurrent ureteric tumour was noted at this time.

In 2003, she presented with severe left loin pain. Ultrasound of the left kidney showed an abnormal soft-tissue mass in relation to the left renal cortex. This correlated with the previous nephrostomy drain site. Computed tomography showed a complex tumour in the region of the left kidney, extending laterally towards the abdominal wall. This tumour showed both cystic and solid elements. It was diagnosed as locally advanced squamous cell carcinoma of the left posterior abdominal wall in the vicinity of the previous nephrostomy drain. This is currently being treated with local radiotherapy (Fig. 1).

Discussion

Ureteric tumours are more commonly seen in the lower third of the ureter. Squamous cell carcinomas account for about 0.7 to 7% of upper tract tumours and are commonly associated with inflammatory processes. These tumours are usually moderately to poorly differentiated and more commonly occur in the renal pelvis than the ureter.

It is well known that seeding of tumours occurs readily through the renal tract.[1–5] There is also a possibility that tumours develop de novo due to concomitant gene expressions along the urinary tract. There is evidence for seeding of tumour cells along the epithelial surface from cephalad to caudad. However, it has been reported that after resection of lower ureteral tumours, recurrence rarely develops subsequently in the upper urinary tract.[6] When this does occur, however, it is thought to be due to tumour cells spreading with urinary reflux along the ureters.

This is probably accentuated by the placement of ureteric stents. This case report also shows the ability of cancer cells to implant in a different environment and grow. The process of implantation requires the cells not only to migrate to the new and different tissue but to adapt to the environment, disengage the normal cell clusters and grow. This is a very complex process and is not well understood.[1] No reports have documented a relationship to suggest that interstitial cystitis is a pre-malignant lesion, but squamous cell carcinoma may be

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doi:10.1016/j.cradex.2004.02.003

(a)

(b)

Figure 1 Computed tomography of the left kidney. (a) Pre-contrast enhanced image shows a soft-tissue mass along the previous nephrostomy tract. (b) Post-contrast enhanced image shows contrast enhancement of the soft-tissue mass with peripheral contrast enhancement with central necrosis.

associated with chronic infection or the presence of stones. This case supports the mechanism of tumours spreading through the transureteral route and then along the nephrostomy tract. This case also explains the need for regular follow-up of patients who have had nephrostomy drainage and urinary tract neoplasm. Prophylactically placed radioactive iridium wires in the nephrostomy tract offer some protection against tumour cell implantation from transitional cell carcinoma.[7] This may be followed by intra-cavitary therapy through the nephrostomy drain with mitomycin or Bacille Calmette-Guérin. As the mechanism of tumour seeding is through reflux, it is not clear whether retrograde ureteroscopic management would offer any protection against seeding.

There have been only two previously published case reports of seeding of the nephrostomy tract. Both resulted after percutaneous manipulation of transitional cell tumour of the pelvis and ureter. To our knowledge, there is no previous reported case of seeding of the nephrostomy tract from a squamous cell carcinoma arising from the distal urinary tract.

References

1. Breul J, Block T, Breidenbach H, Hartung R. Implantation metastasis after a suprapubic catheter in a case of bladder cancer. *Eur Urol* 1992;**22**:86—8.
2. Huang A, Low RK, DeVere White R. Nephrostomy tract tumor seeding following percutaneous manipulation of a ureteral carcinoma. *J Urol* 1995;**153**:1041—2.
3. Gibbons RP, Bush Jr WH, Burnett LL. Needle tract seeding following aspiration of renal cell carcinoma. *J Urol* 1977;**118**: 865—7.
4. Lim DJ, Shattuck MC, Cook WA. Pyelovenous lymphatic migration of transitional cell carcinoma following flexible ureterorenoscopy. *J Urol* 1993;**149**:109—11.
5. Craig Kiser G, Totonchy M, Barry JM. Needle tract seeding after percutaneous renal adenocarcinoma aspiration. *J Urol* 1986;**136**:1292—3.
6. Johnson DE, Babaian RJ. Conservative surgical management for non-invasive distal ureteral carcinoma. *Urology* 1979;**13**: 365—7.
7. Woodhouse CRJ, Kellett MJ, Bloom HJG. Percutaneous renal surgery and local radiotherapy in the management of renal pelvic transitional cell carcinoma. *Br J Urol* 1986;**58**:245.